



Nutrition 2004

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Foods

Fats

Fish

Fiber

FDA



Topics of Discussion

- Diet and Health
- Vitamins & Minerals
- Supplements

Mediterranean Diet

- 25,000 Greeks
- Diet scale, 0-9
- For each 2 point rise
 - ◆ 25% less all cause death
 - ◆ 33% less CAD
 - ◆ 24% less Ca

Mediterranean Diet

- Mono and Sat fat related to drop in mortality
- Highest benefit:
 - ◆ Women
 - ◆ Age >55
 - ◆ Never smokers
 - ◆ Overweight, sedentary

Foodborne Illness

- Patients with depressed immune function should avoid which of these foods?
- A. Caesar Salad, Key lime pie
- B. Raw mollusks (oysters, etc.)
- C. Alfalfa sprouts
- D. Fresh (unpasteurized) juices

Cholesterol

- Which of these statements are true?
- A. dietary changes constitute first line Rx for elevated cholesterol
- B. patients who will do well with diet Rx can be identified in 6 weeks
- C. Soy protein can lower cholesterol

Cholesterol

- Israeli study, 136 Hi-cholesterol patients
- success: age <55, cholesterol >170, eating more fat, less overweight
- can predict success @ 6 weeks
- lean patients, 8.2% decrease LDL

Beans, beans... really are good for the heart!

- Prospective study of 9632 men & women
- legumes 4 or >/week,
Relative Risk of CHD = 0.78
- legumes can lower cholesterol

Fats - Nuts

- Which of the following are true:
- A. regular consumption of nuts increases heart disease
- B. regular consumption of nuts raises cholesterol
- C. most nuts are rich sources of monounsaturated fatty acids

Nuts

- Study of 30 pts, 3 diets: usual American, AHA step 1, macadamia nut-based. Latter two lower cholesterol, nuts lower triglycerides
- almonds and walnuts similar effects
- Epi studies associate nuts and lower CV mortality

Nuts

- Which of the following nuts have favorable effects on plasma lipids
- A. almonds
- B. walnuts
- C. macadamia nuts
- D. filberts
- E. Space Alien Society Members

NUTS: Harvard Study

- Hi Vs Lo Fat Wgt loss diet
- Hi Fat: high Unsat Fats
- Nuts, peanut butter
- Hi Fat: better loss, adherence
- “Healthy Adkins Diet”

NUTS

- “Eat a handful...
- not a canful”
- (Colleen Pierce, Balto Dietician)

TRANS-Fats

- Which of the following are true:
- A. increased use of mass transit raises these fat levels
- Trans-fats are formed by high temperature cooking
- Trans-fats raise LDL and lower HDL
- On a per-Gm basis, trans fats are worse than saturated fats

TRANS-Fats

- Formed when hydrogenating oils
- on a per-Gm basis, increase LDL and lower HDL more than Sat-fats
- NEJM study, 36 Hi-cholesterol patients, LDL lowest on soybean oil; butter and stick margarine increase LDL and lower HDL
- Baked goods, commercial fries

Commercial Fries

	<i>trans</i>	<i>sat</i>	<i>bad</i>
<i>fats</i>			
■ McDonald's:	5.0	5.0	
	10.0		
■ Burger King:	6.5	4.5	
	11.0		
■ Wendys:	4.5	3.0	
	7.5		

FISH

- Which of the following are true?
- A. Regular fish eating is associated with lower sudden death
- B. post-MI patients have lower mortality if they eat fish twice a week
- C. In post-MI patients fish oil adds benefit to ASA, cholesterol lowering drugs

FISH

- DART study, fish twice a week post-MI, 29% drop mortality
- GISSI trial, usual care Vs n-3 FAs, drop in total mortality, additive
- Fish in wt loss diet = lower glucose, insulin, better lipids
- 4 x 3 oz servings oily fish/wk, e.g. salmon, herring, mackerel, tuna

Fish Oil Study

- 11,323 post MI pts
- 1 Gm n-3 fatty acid
- supplement Vs placebo
- 41% drop in sudden death
- Circulation, NEJM & JAMA

Foods Hi in n-3's

- **Fish**(mostly EPA and DHA)
 - ◆ mackerel, cod, halibut, herring
 - ◆ albacore tuna, rainbow trout
 - ◆ Coho & Chinook salmon
- **Plants** (mostly ALA)
 - ◆ flaxseed, walnuts, almonds
 - ◆ wheat germ, pinto & soybeans

Omega 3 Guidelines

- Decr dysrhythm, thrombosis
- Lower plaque growth, BP
- Anti-inflammatory
- EAT: fish **twice** a week
- EAT oils/foods Hi ALA
- Hi TGs: 2-4 Gm EPA-DHA/day

Select true statements about diet and lipids

- A. Trading carbs for sat fats may raise triglycerides, lower HDL
- B. Trading almonds, walnuts, or macadamia nuts for sat-fats raises HDL/ lowers LDL
- C. Trading mono fats for sat fats raises HDL/lowers LDL
- D. Poor control of diabetes and hi alcohol intake raise triglycerides

Alzheimer's & Fats

- Risk rises with Hi Sat Fats
- “What is good for the heart is good for the head”
- (Bill Thies, Alzheimer's Assoc, Washington Post)

Good dietary changes for diabetics include:

- A. replacement of Sat-Fats with carbohydrates
- B. replacement of Sat-Fats with monounsaturated fats
- C. increase in dietary fiber to lower cholesterol
- D. Increase in dietary fiber to lower post prandial glucose

BREAKFAST

- Breakfast = ~50% less risk DM & obesity
- 2681 Pts, 8 yr F/U
- Whole grains lower risk
- Refined grain B'Fast - **NOT**

Hi-Fiber Diet & Diabetes

- NEJM study type 2 diabetics
- ADA diet Vs Hi-Fiber diet
- 55% carbs, 15% protein, 30% fats
- insulin drops 12%, glucose 10%
- cholesterol drops 6.7%, LDL 6.3%, triglycerides 10.2%

Fiber in Foods

- Hi-Soluble fiber foods include:
- A. Oats
- B. Fruits
- C. Legumes
- D. Newspaper

Fiber & Colon Cancer

- 2 studies, Lancet
- 34,000 pts, Ca screening, risk of Ca inverse to fiber intake
- 500,000 pts, EPIC study, dose related protection, both sides of colon, male and female

Fiber & Weight Loss

- 12 year study
- Women increased fiber by 8 Gm/day, ate 150Kcal less/day
- Those w/highest fiber intake weighed 8# less, vs 20# gain

Vitamins C & E

- AHA review: supplements fail in primary prevention
- ASAP trial, only E + C decrease carotid intimal thickness
- Vit C @ 500 Mg/day increases thickness carotid intima

Beta-Carotene

- Finnish study, heavy smokers, supplements *increase* cancer mortality
- Physician's Health Study, prostate cancer, supplements decrease risk only in those with low levels
- Beta-carotene only one carotenoid

Calcium - True or False

- Ca & Vit D increases bone mass in elderly (protein intake adequate)
- Ca & Vit D have been shown to decrease fractures in elderly
- over 65, 1200 mgm/day RDA
- increasing dietary Ca increases risk of kidney stones

Calcium - True or False

- Reducing salt & protein with normal Ca intake provides greater protection from recurrent CaOx stones than low Ca diet
- Strong experimental evidence shows salt & protein increase Ca excretion
- Walnuts, spinach, rhubarb, parsley, & chocolate are oxalate rich foods

Calcium - True or False

- Prospective controlled trials have shown that low-dose thiazides reduce Ca stone recurrence
- Increasing dietary Ca may decrease stone recurrence, whereas Ca supplements may increase stone recurrence

Soy

- Select the true statements:
- A. Soy products can be labeled capable of lowering cholesterol
- B. FDA says: “25 Gm soy protein, as part of diet low in sat fat and cholesterol, may reduce heart disease risk”
- C. Isoflavones are a major type of plant-derived estrogen

Soy

- Supplement trial: 20 Gm complex carbs, 20 Gm soy protein q day or BID
- cholesterol/LDL decreased 6/7.5%
- lower diastolic BP w/BID soy
- decreased hot flushes w/BID soy

Soy Isoflavones

- Weak estrogen, occupy receptors
- 100 mgm isoflavones/day safe
- about 3 servings/soy (tofu, soy protein)
- NAMS: isoflavones, or other soy components. Recommend soy foods, not supplements
- soy protein lowers cholesterol

Modest Alcohol Intake:

- Select the correct responses:
- A. increases HDL
- B. increases platelet aggregation
- C. increases fibrinogen levels
- D. is associated with greater longevity than abstinence or heavy drinking

Alcohol

- NIH data, 1226 men and women
- cross-section epi study
- HDL increases with
 - ◆ 1 drink/day = 25%
 - ◆ exercise, 60+ min/day = 6%
 - ◆ smoking = - 17%

Alcohol & post-MI Survival

- Death rates: abstainers = 22%, light drinkers = 13%, moderate drinkers = 9%
- Similar for men, women, smokers, nonsmokers, diabetics, normo and hypertensives
- Beer, wine, liquor similar

ALCOHOL & COLDS

- Spanish Study
- 2 drinks/day, red wine
- decreased colds
- RR 0.56
- Not w/beer or spirits

Alcohol, But...

- alcohol above ~1drink/day linked to increased breast cancer risk in women
- above 2 drinks a day linked to other cancers in men and women
- heavy drinking increases hypertension and worsens CV prognosis

Folate & Women; which true?

- A. USPHS recommends childbearing age women increase folic acid to reduce spina bifida/neural tube defects
- B. CDC recommends childbearing age women consume 0.4 mgm folic acid daily

Folic Acid, which true?

- C. Since $\sim 1/2$ pregnancies unplanned, and neural tube defects occur before pregnancy known, food fortification with folate is particularly important
- D. If all childbearing age women consume folic acid daily, pregnancies affected by neural tube defects can decrease by $1/2$

Folic Acid, which true?

- E. For a woman who has a history of prior pregnancy with neural tube defect, the recommended daily folic acid dose is 4.0 mgm daily

Ten Diet Commandments

- **1** Eat multigrain bread daily
- **2** Eat fruit every day
- **3** Do not use cream/butter
- **4** Eat more fish/less meat
- **5** Use olive oil

10 Diet Commandments

- **6** Eat daily variety of vegetables
- **7** Have a handful of nuts daily
- **8** Use more garlic/fresh herbs
- **9** Drink a glass of wine per day
- **10** Eat in pleasant/relaxed atmosphere

Coffee

- Coffee consumption is linked consistently to:
- A. increased risk of pancreatic cancer
- B. increased risk of bladder cancer
- C. increased risk of colon cancer
- D. increased risk of heart disease
- E. increased risk of peptic ulcer

Coffee

- *Cafestol* = rise in cholesterol
- removed by filter coffee brewing
- retained by boiling methods, e.g. French press
- But...Finnish study, $n = 22,000$, no association w/heart disease

Coffee

- Bottom line: @ 3c/day, appears safe for most people
- habituation can occur @ 1-2 c/day
- pregnant/nursing limit 2c/day
- caffeine withdrawal headaches

Coffee

- Study links ~2c/coffee/day with 36% increase in miscarriages
- study of caffeine byproduct, increase miscarriage @5-6 c/day
- Pregnant/nursing, limit to 2 c/day

Coffee

- 30 yr study, 8,000 Japanese-Americans in Hawaii = less Parkinson's disease
- Harvard study of 46,000 men, 2-3 c/day = ~40% drop gallstones
- 6c/day strong filter coffee = ~20% increase in homocysteine

WAVE Trial

- 4 Arms
- Hi Mortality, Vits Vs Placebo
- Placebo arm: least CAD - least mortality